

What is claimed is:

1. A component manager that manages one or more tracking components, the component manager comprising:

5 a deployer that generates a client interface for each tracking component output port, and deploys the client interface in a directory service, wherein each entry is a tracking point object.

10 2. The component manager of claim 1 wherein the deployer further: generates a client interface for each tracking component input port, and deploys the client interface in a directory service, wherein each entry is a tracking point object.

15 3. The component manager of claim 2 wherein:

at least one output port is a synchronous output port.

4. The component manager of claim 2 wherein:

at least one output port is an asynchronous output port.

15 5. The component manager of claim 2 wherein:

at least one input port is a synchronous input port.

6. The component manager of claim 5 wherein:

at least one input port is an asynchronous input port.

20 7. The component manager of claim 2 wherein a client interface may be interacted with using a distributed communication protocol.

8. The component manager of claim 6 wherein a client interface may be interacted with using a distributed communication protocol.

25 9. A tracking component that comprises one or more output ports whose data values may be synchronously requested, wherein the data values may be any object type, and wherein a synchronous request for an output data value results in an invocation of a predetermined component method representing the output port that: (a) performs processing to obtain the output data value, or (b) returns an already gathered data value generated by an internal component process.

10. A tracking component that comprises one or more input ports whose data values may be synchronously submitted, wherein the data values may be any object type, and wherein a synchronous request for submitting an input data value results in an invocation of a predetermined component method representing the input port that performs processing to: (a) store, (b) operate upon, or (c) transform a new input value.

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11. A tracking component that comprises one or more output ports whose data values may be asynchronously generated by the tracking component and received by a component manager, wherein the data values may be any object type.

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12. A tracking component that comprises one or more input ports whose data values may be asynchronously requested from the tracking component by a component manager, wherein the data values may be any object type.

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13. The component manager of claim 2 which further comprises:
a manager deployer that deploys one or more of a client interface representing an instance of the component manager, wherein each component manager may drive data to and from tracking components located in remote component manager instances interacting through interfaces of the remote component manager instances using a distributed communication protocol.

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14. The component manager of claim 2 further comprises:
a listener connector that registers a client to a tracking point using a predetermined Listener interface; and
a listener responder that invokes a predetermined method on the predetermined Listener interface whenever a new data value is input to the tracking point.

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15. The component manager of claim 2 further comprises:
a persister that persistently stores all data values input to a tracking point.

16. The component manager of claim 2 further comprises:
a persister that receives information specifying predetermined data received by the component manager to be stored in persistent non-volatile memory.

17. The component manager of claim 2 further comprises:

an invoker that invokes a predetermined method on a tracking component periodically based on a predetermined time interval.

18. The component manager of claim 2 wherein the deployer further: reads and deploys a file including component classes in the component

5 manager.

19. The component manager of claim 2 wherein the deployer further: reads and deploys a file including component instances in the component manager.

20. The component manager of claim 17 wherein the deployer further
10 comprises:

a deployment descriptor interpreter that reads a deployment descriptor included in a file wherein a synchronizing interval may be declared for each tracking component, which synchronizing interval determines the predetermined time interval.

21. The component manager of claim 20 wherein the deployer
15 interpreter further:

reads the deployment descriptor wherein synchronous inputs and outputs and asynchronous inputs and outputs are declared.

22. The component manager of claim 21 wherein the deployer
20 interpreter further:

reads the deployment descriptor wherein a time interval for invoking a predetermined method periodically is specified.

23. The component manager of claim 2 further comprises a software component to operate on components implemented in one of the following component models: JavaBeans, Microsoft COM, and CORBA.

24. The component manager of claim 2 wherein the deployer further:
25 reads and deploys a file including one or more tracking point deployment descriptors, each of which tracking point deployment descriptors includes a list of tracking point names and a description of paired tracking point connections, each of which paired

connections having a source tracking point name and a destination tracking point name;
and

matches tracking points generated by output and input ports attached to
previously deployed tracking components.

5 25. The component manager of claim 24 wherein:
at least one output port is a synchronous output port;
at least one input port is a synchronous input port; and
the component manager further comprises a forced data transmitter that
periodically synchronously requests data from a source synchronous output port and
10 submits the data obtained to a destination synchronous input port based on a predetermined
tracking point connection.

15 26. The component manager of claim 25 wherein the deployer
interpreter further:

reads the deployment descriptor wherein a time interval to transmit forced
data periodically is specified.

20 27. The component manager of claim 24 wherein:
at least one output port is an asynchronous output port;
at least one input port is a synchronous input port; and
the component manager further comprises a push data transmitter that
synchronously submits a data value to an input port of a tracking component represented by
a predetermined tracking point destination whenever a corresponding predetermined
tracking point source is an asynchronous output port that has generated a new data value.

25 28. The component manager of claim 24 which further comprises:
at least one output port is a asynchronous output port;
at least one input port is an asynchronous input port; and
the component manager further comprises a pull data transmitter that
synchronously requests a data value from an output port of a tracking component
represented by a predetermined tracking point source whenever a corresponding

predetermined tracking point destination is an asynchronous input that has requested a new data value.

29. The component manager of claim 2 further comprises:

a configurator designator that discovers a configurator interface on each tracking component which provides names of configurable attributes that can modify behavior of a tracking component; and

a configurator manager that automatically constructs an executable file that represents an user interface that displays attribute values and receives user input to modify the attribute values.

10 30. The component manager of claim 29 wherein the configurator manager further displays the generated configuration user interface showing the attribute values.